The AMCOM LCMC — Maximizing System Performance While Delivering Unparalleled Soldier Support

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In the education business, the three 'Rs' of reading, 'riting and 'rithmetic are basic and fundamental. In the warfighting business and, specifically, for the U.S. Army Aviation and Missile Life Cycle Management Command (AMCOM LCMC), the three 'Rs' of reduce, reduce and reduce are basic and fundamental. Those reductions are focused on decreasing the burdens on our Soldiers as *Operations Enduring* and *Iraqi Freedom* (*OEF/OIF*) continue.

New technology and maintenance management information systems will help automate parts ordering, tracking and maintenance scheduling for high operations tempo (OPTEMPO) utility helicopters like the Black Hawk. (U.S. Army photo by SSG Angelique Perez.)

Since being formed in October 2004, the AMCOM LCMC at Redstone Arsenal, AL, has managed to transform from a concept to an integrated, closely aligned organization with a single commander who has the primary responsibility for the life cycle of all the Army's aviation and missile weapon systems. Put simply, we have comprehensively transformed from the industrial age to the information age.

We began with the CH-47 Project Manager (PM) as a one-team, dual-hatted systems integrator — the "Trail Boss." Readiness, modernization and sustainment have all come together to produce a smoother flow of better products to the field since then. By way of maximum support, AMCOM elements are working with their Program Executive Office (PEO) Aviation and PEO Missiles and Space (MS) counterparts to set the standard that was envisioned 20 months ago.

We now have a single point of contact and a direct conduit for situational awareness and the total support structure of our systems when help is needed. Improved communications, decision making, system optimization and shortened response times are the returns on the LCMC investment. We are fully integrated and continually assess our effectiveness to provide unparalleled weapon systems support.

Developed over time — and tailored to meet the unique needs and requirements of each PM and the weapon systems supported today — we are providing the day-to-day operational direction for well-informed decisions that affect the weapon systems, including supporting activities from AMCOM, such as the Integrated Materiel Management Center (IMMC), Acquisition Center, Security Assistance Management Directorate and the Aviation and Missile Research Development and Engineering Center (AMRDEC). Matrixed personnel maintain a strong and clear relationship with their owning organization. This initiative is based on an active information flow about equipment status, beginning at the weapon system and flowing back to a combined PM/AMCOM Team. Enablers are being designed to provide the PM with the necessary information and inputs with which to make decisions that will maximize system performance and minimize the sustainment burden on Soldiers.

Bravo Co., 2nd Battalion, 502nd Infantry Regiment Soldiers prepare to conduct search and sweep operations from their Black Hawk helicopter near Shakaria, Iraq, last December. Behind the scenes at Corpus Christi Army Depot, TX, technicians continue to overhaul, repair and retrofit helicopters, engines and bearings to keep the fleet flying. (U.S. Army photo by SSG Kevin L. Moses Sr.)

Recently, an AMCOM team comprising members from the command group, IMMC and AMRDEC traveled to the theater to assess equipment issues and the status of test equipment used by aviation maintenance units. We discovered that our legacy Electronic Equipment Test Facility (EETF) was old and using antiquated technology. Through our discussions with the units, we were able to focus our attention on both parts and support issues and work with the units to develop solutions that have resulted in a dramatic increase in EETF readiness rates. This is vitally important because the *OEF/OIF* OPTEMPO is four times greater than peacetime. The importance of keeping helicopters flying and minimizing down times reduces operational vulnerabilities for the Soldiers on the ground. Simply put, when our aircraft fly, troops live. We are working to get parts to Soldiers in hours, not days.

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PEO Aviation Priorities

Paul Bogosian, Program Executive Officer Aviation, continues to focus on acquisition and modernization for integrated and streamlined fleet management. This year, his top five technology challenges are:

- Lightweight Armor — Improve protection to crew and flight- and/or mission-critical components from small- and medium-caliber ordnance, yet reduce overall weight of the aircraft, and produce a cargo aircraft floor system for integrated cargo handling and ballistic protection.
- Infrared (IR) Suppression, Active and Passive — Better protect aircraft from IR-guided weapons, lower the IR signature of aircraft to make seeker lock-on difficult and to defeat incoming threats with jammers.
- Improved Lift Technologies — Respond to the need for lighter-weight blades, engines and transmissions that provide increased lift and power. Additionally, respond to the need for improved specific fuel consumption. This technology effort will provide enhanced aircraft performance while carrying more mission weight.
- Obstacle- and Wire-Avoidance System — We are pursuing funding to develop a system that will provide all-weather, day and night obstacle and wire-strike detection and warning capability. Low-hanging wires and towers continue to cause incidents and pose a significant hazard to aircraft and crews in combat.
- Helicopter Autonomous Landing System — We are developing corrections for brown- and white-out conditions and are pursuing funding to develop a system to improve aircraft stability and control in low-speed flight in degraded visual environments. The ability to recover an aircraft in brown- and white-out conditions needs to be upgraded, removing aircrews and aircraft from current risks.

The PEO has used value stream analysis for its local hiring process. This analysis has led to significant changes in the PEO's operating procedures, resulting in streamlining the time involved in announcing and filling critical positions. It is vitally important to have our key support positions fully staffed and ready to meet Soldier requirements. The PEO also uses business process improvement tools as the command's lessons learned program, as well as sharing best practices during staff, integrated process team (IPT) and task force meetings.

Keep 'em Flying

The AMCOM LCMC is directly supporting combatant commanders and Soldiers in the field by developing the aggressive sustainment activities required to support a fleet of more than 4,000 manned and unmanned aerial vehicles (UAVs) and an OPTEMPO that competes with hostile weather and environmental conditions. More than one million hours have been flown in the U.S. Central Command area of responsibility, and we have maintained readiness rates above Army standards with no negative impact on our warfighters. Likewise, there has not been a fleet grounding attributable to materiel failure.

Ancillary to the manned aircraft and UAVs is the equally important effort to provide and sustain aviation ground support equipment such as maintenance platforms, auxiliary power units, tooling and aircraft recovery equipment. The LCMC is directly involved in supporting the warfighter through the Preset and Reset of aircraft as they deploy and redeploy to theater with the latest survivability modifications and environmental modifications. These complex, challenging and critical programs prepare aviation units and their aircraft for deployment on *OEF/OIF* rotations.

Aircraft PMs have the primary responsibility for coordinating and managing the Preset program for their particular airframe or platform. The platform PMs coordinate the Modification Work Order (MWO) kit requirements and deliveries with the "Kit" PMs, scheduling MWO installations with AMCOM OLR sites and units, to help minimize the impact to the unit's critical predeployment training requirements.

> Our growing Lean/Six Sigma effort has been embraced as a cultural innovation that continuously listens to customers, questions the status quo and improves results through fact-based decisions.

PEO MS continues to develop and adapt acquisition management processes that respond to combatant commanders' changing battlefield requirements and significantly reduce engineering and maintenance costs. Here, the 13th Field Artillery Regiment, 42nd Infantry Division, responds to a fire mission in Central Iraq. (U.S. Army photo.)

We are engaged in numerous efforts to continually enhance capabilities in the utility mission area. The maintenance management information system being developed in the Black Hawk Health Utility Monitoring System will benefit the system and will become an integral part of the Army's logistics transformation by providing the necessary information to automate parts ordering, tracking and maintenance scheduling. These capabilities will be fielded Armywide with the UH-60M. Moreover, the UH-60M Black Hawk upgrade will clearly provide leap-ahead technologies to the warfighter as well as stable support operations for unprecedented capabilities in future modular force operations.

Supporting the global war on terrorism (GWOT) has significantly increased fleet OPTEMPO. The AH-64 Apache fleet is well into the second round of Reset. During the first iteration, 222 Apaches were Reset in an average time of 105 days per aircraft. Thanks to aggressive LCMC efforts, we can now Reset an Apache in 72 days.

Our LCMC maximizes both the service provided to the Soldier and the go-to-war capability of the weapon system. Soldiers care very little about how the acquisition and sustainment communities are organized or managed. What they care about is having functional, reliable, effective weapon systems. Having a single point of contact when help is needed, and having all the folks back home do everything possible to minimize the Soldier's burden is what our LCMC is all about.

The LCMC team at Redstone Arsenal has worked to improve system readiness by giving Logistics Assistance Representatives a direct conduit to the total support structure for the system. LCMC teams have visited the theater of operations to learn firsthand how to aid in improving the go-to-war capability of the system by improving communication, decision making, system optimization and response times to meet Soldiers' needs.

PEO Missiles and Space

PEO MS, which became part of the LCMC in June 2005, is led by BG Mike Cannon and his dedicated team of experts who are continuing to design and develop an organization that is centered on rapidly adapting responsive acquisition management processes that respond to combatant commanders' changing battlefield requirements. (See related article by BG Mike Cannon and Dr. Roger L. Cole on Page 10 of the January-March 2006 *Army AL&T* Magazine.)

Most notable is the continuing progress to quickly get the High Mobility Artillery Rocket System (HIMARS) and Guided Multiple Launch Rocket System (MLRS) products fielded to the Soldiers who need them. The PEO is using the following five key organizational elements to understand the context of supporting transformation and achieving success in forming aligned, integrated and flexible weapon system teams that will

Letterkenny Army Depot (LEAD) technicians continue to deliver the highest on-time delivery rate in the Army – an accomplishment that resulted in LEAD being selected for the Shingo Award for Excellence in Manufacturing. (U.S. Army photo courtesy of LEAD.)

respond to today's complex, varied and unpredictable threats.

- Environment
- Vision and strategy
- Organizational design
- Culture and leadership
- Results

PEO MS has initiated an M270 MLRS launcher recovery program that has resulted in significantly reduced engineering costs — $40 million — that will allow us to keep Foreign Military Sales commitments through 2016. Likewise, the PEO has worked with IMMC to accelerate M299 launcher electronics assembly spare parts deliveries, eliminating Non-Mission-Capable-Supply backorders to prevent fielding impacts.

In addition, LCMC coordination support strategies have resulted in the elimination of Hellfire missile training seekers backorders on an out-of-production item that has increased availability of this critical training asset. Further, Hellfire II tactical missile spare parts administrative lead times and associated costs have been reduced, bringing economies of scale and reducing government and contractor work that did not add value.

Forming an LCMC is much more than collocation. *Collocation* only sets the stage for efficient and effective management and coordination. *Integration* is the desired state and is attained by:

- Collocating supporting personnel with a single weapon system authority.
- Establishing common metrics and process improvement tools such as accurate and timely information flow from the field.
- Employing readiness modeling capability.
- Practicing Lean/Six Sigma (LSS).

This integration is producing significant improvements in weapon system support to the warfighter and equally significant improvements in life-cycle management effectiveness and efficiency. Although rooted in the corporate method of eliminating wasted time, money and material, our growing LSS effort has been embraced as a cultural innovation that continuously listens to customers, questions the status quo and improves results through fact-based decisions.

Army Depots Leading the Way

We point with pride to our Letterkenny Army Depot in Pennsylvania — the first Army depot to win the coveted Shingo Award for Lean initiatives on the Patriot launcher. For 16 years, the Shingo Award for Excellence in Manufacturing has honored businesses and researchers for using and expanding world-class manufacturing practices with the Lean body of ideas. *Business Week* magazine has dubbed the Shingo as the "Nobel prize of manufacturing." The award is named for Shigeo Shingo, the engineer who developed the renowned Toyota production system.

With the highest on-time-delivery rate in the Army, our military knows that when the first shot has to count, they can depend on LEAD. In terms of raising the bar and then jumping well over it, LEAD has saved the military $21.5 million and notched a 99-percent customer satisfaction rating in the face of a 52-percent workload increase, with a corresponding workforce increase of only 27 percent. What's more, by using Lean, the 2,800-member workforce has saved almost 100,000 square feet of interior and

HIMARS continues to deliver precision strike capability for artillery units operating in Iraq and Afghanistan. (Photo courtesy of Lockheed Martin.)

exterior workspace. Letterkenny is leading the pack and setting the standard for future multifunctional depots. The depot is not only doing better, it's continuing to improve every day.

Likewise, the Corpus Christi Army Depot (CCAD) in Texas continues to champion the cause of overhauling, repairing, modifying, retrofitting, testing and modernizing helicopters, engines and components for all services and foreign military customers. CCAD is also the home of a unique facility that repairs and refurbishes bearings. While there are many different components required to keep a helicopter flying, they all have one critical part in common — bearings.

The CCAD bearing facility is one of only three sites in the Nation certified for complete bearing reconditioning. The facility implements an extensive tracking system of all items serviced, which includes both computer and hard copies of serial numbers and invoice information. The CCAD bearing facility received its ISO 9001:2000 certification in November 2003, and has been validated as "Best Manufacturing Practice" every fiscal year since 1997. Turnaround times to repair and refurbish bearings are three days or fewer. Last year, depot employees processed more than 55,000 bearings, saving the Army more than $28 million. Not only did we have mission-ready aircraft ready to prosecute the GWOT, but we also had aircraft ready to support Hurricane Katrina relief efforts as well.

In December, the entire depot received its ISO 9001:2000 certification. Bear in mind that this certification is not bestowed lightly. Following an audit that reviewed all the depot's management systems, CCAD didn't just pass, it was certified "deficiency free."

Truly, this is a significant AMCOM LCMC business management system milestone. ISO certification now puts CCAD at a higher level, and it will help open doors to private and public partnerships with some of the larger commercial corporations. Accordingly, it postures the LCMC for further improvements, putting us on a more competitive level, which is a primary ingredient of ISO certification. It also will allow us to maintain our workforce during non-war times by contracting with commercial companies that require their contractors to be ISO certified.

During *OEF/OIF*, AH-64 Apaches have been in high demand to provide U.S. and coalition troops with critical close-air support during combat and search and sweep operations. During the course of the war, the AMCOM LCMC has Reset hundreds of Apaches. (U.S. Army photo.)

Looking Ahead

As we continue to evolve, not all future LCMC implementations will look alike. Differences in weapon system life cycles will affect the form future LCMC teams take, and differences in the matrix structures of the missile and aviation teams may result in different team structures. However, the general principles of consolidating the activities of a weapon system life cycle and giving control and authority to execute the life-cycle management mission to the PM will remain the same.

The best measure of our ability to meet Soldiers' requirements is the readiness of the system as measured by its go-to-war capability. All common metrics and process improvement tools used to measure the weapon system are being correlated to three primary vectors — reduction in downtime rates, reduction in demand rates and reduction in total cost of ownership.

The cross-functional IPTs comprise the PEOs, PMs, AMCOM and AMRDEC, and they are continuing to develop the system of measurements that will be used to assess the overall LCMC's effectiveness. In summary, LCMC implementation is providing unparalleled weapon system support that meets the Army's and the Army Acquisition Corps' transformation goals.

As I said at the outset, reducing the burden on our warfighting Soldiers is what our LCMC efforts are focused on. In line with that, I am reminded of what the Netscape Chief Executive Officer once said, "The main thing is to keep the main thing the main thing." For the AMCOM LCMC, "The Main Thing" is reducing Soldier burdens by providing the best, most reliable and effective equipment at the right time, at the right place and at the right price.

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